

100% Recycled

Development of the first 100% post-consumer recycled plastic bottle

By Annie Voyer

For several years now, the bottled water industry has faced public scrutiny because of its environmental impact. In the past two years, the media and prominent environmental figures have taken a public stance against the industry, and the reputation of bottled water has suffered. As consumers become more sensitive to environmental issues, many of them have chosen to reduce their personal environmental footprints by drinking less bottled water.

As a result, an industry that once grew in the double digits every year has been declining. But demand still exists for the product because consumers understand the importance of hydration in a healthy lifestyle. The public's criticism is specifically directed at the plastic bottle's negative environmental impact. In this declining market, there is an increasing demand for a more environmentally responsible choice, and companies that reduce their bottle's environmental footprint will have a clear advantage.

In the case of Naya, a company based in Canada, a drive to lead the industry to improve its environmental footprint demonstrates that change is possible. Even companies who operate in the most criticized industries can lead the way to better alternatives.

Bold Transition

In addition to financing numerous environmental programs, Naya continuously examines how it can reduce the impact of its own operations, notably in the production of its bottles. The popular answer to this challenge is to reduce the quantity of plastic contained in each bottle, a technique called lightweighting, which also happens to be cost-reducing. The company examined the different possibilities for carbon reduction in the manufacturing process and concluded that while lightweighting does reduce carbon emissions substantially, it is nowhere near the reduction obtained by using

recycled plastic instead of virgin plastic. Unfortunately, it is technologically very difficult to achieve significant lightweighting while using recycled plastic because of its different chemical characteristics.

Naya made the difficult choice to transition to recycled plastic, a decision that meant significantly reducing carbon emissions but consequently increasing costs while most competitors were reducing them.

It took almost two years to plan the process of incorporating recycled plastic into the bottles, a long and arduous step that was nevertheless imperative because it would ensure that the end result be of top quality.

First, a plethora of tests was required to ensure that recycled plastic was safe to drink from and that no dangerous organic compounds would be released into the spring water.

Second, because recycled plastic does not have the same viscosity as virgin plastic, there is a risk that the bottles could develop micro-fissures that would let the water seep out over time. It took many months to perform the quality assurance tests and adjust the machinery to ensure that it was compatible with the use of recycled plastic.

Finally, because recycled plastic is yellow in color, the company had to work with its suppliers to find solutions that would avoid color distortion of the bottle. With all these tests and analyses complete, and with a Health-Canada approval in hand, Naya could

finally proceed to the implementation of the project.

Implementation

To ensure a quality transition, Naya followed scientific protocol and moved through three phases of rigorous testing for nine to 12 months, increasing the percentage of recycled content at each step. In the first quarter of 2008 the first 25% recycled plastic bottle was launched; in March 2009 they moved to 50%; and finally in December 2009 the company launched its first bottle made from 100% post-consumer recycled plastic.

While moving progressively towards 100% recycled plastic, the company also initiated two separate lightweighting projects that collectively allowed it to reduce the weight of its bottles by more than 30%.

Naya was also certified by the Carbon Trust, which helped it measure the carbon footprints of its products and certifies that the 100% recycled plastic bottle reduces the amount of carbon emitted in the manufacturing of the bottle by 50%. When considering the end-to-end process of moving all of the company's materials from its suppliers, through the manufacturing process and to the end user, incorporating recycled plastic reduces the carbon emissions of the process by 18%.

The 100% recycled plastic bottle is clearly great news for the company and all the stakeholders, but it is also great news for the bottled water industry as a whole. By leading with this innovation, Naya is putting pressure on other manufacturers and ensuring that the whole industry significantly improves its environmental impact. *wqp*

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